| INCH-POUND |

WW-P-460D
February 28, 1994
SUPERSEDING
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April 22, 1983

FEDERAL SPECIFICATION

PIPE FITTINGS; BRASS OR BRONZE (THREADED), CLASSES 125 AND 250 POUND

This specification is approved by the Commissioner, Federal Supply Service, General Services Administration, for the use of all Federal agencies.

1. SCOPE AND CLASSIFICATION

1.1 Scope. This specification covers threaded pipe fittings made of brass or bronze, classes 125 and 250. Certain requirements also pertain to wrought or cast plugs, bushings, couplings, and caps.

1.2 Classification. Fittings are to be furnished in the size and pressure rating designated by the applicable Military Specification Sheet (MS), as specified (see 6.2).

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications and standards. The following specifications and standards form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation (see 6.2).

|Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commanding Officer (Code 156), Naval Construction Battalion Center, 1000 23rd Avenue, Port Hueneme, CA 93043-4301, by using the Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.|

AMSC N/A FSC 4730

Federal Specifications

PPP-B-566 - Boxes, Folding, Paperboard
PPP-B-601 - Boxes, Wood, Cleated-Plywood
PPP-B-621 - Boxes, Wood, Nailed and Lock-Corner
PPP-B-636 - Boxes, Shipping, Fiberboard
PPP-B-665 - Boxes, Paperboard, Metal Edged and Components
PPP-B-676 - Boxes, Setup

Federal Standard

FED-STD-123 - Marking for Shipment (Civil Agencies)

Military Specifications

MIL-P-116 - Preservation, Methods of
MIL-P-130 - Paper, Wrapping, Laminated and Creped
MIL-P-17667 - Paper, Wrapping, Chemically Neutral (Non-Corrosive)

Military Standards

MIL-STD-129 - Marking for Shipment and Storage
MIL-STD-2073-1 - DOD Materiel Procedures for Development and Application of Packaging Requirements
MS 14305 - Fittings, Pipe, Brass or Bronze, Threaded (Tees, Crosses, 45-Deg Elbows, and Couplings), Class 125
MS 14306 - Fittings, Pipe, Brass or Bronze, Threaded (Reducers, Close and Open Return Bends, and 45-Deg Y-Branches), Class 125
MS 14307 - Elbows, Pipe, Brass or Bronze, Threaded, 45-Deg, Street, Class 125
MS 14308 - Elbows, Pipe, Brass or Bronze, Threaded, 90-Deg, Reducing, Class 125
MS 14309 - Tees, Pipe, Brass or Bronze, Threaded, Reducing, Class 125
MS 14310 - Caps, Pipe, Brass or Bronze, Threaded, Class 125
MS 14311 - Fittings, Pipe, Brass or Bronze, Threaded (90-Deg, Elbows, Tees, Crosses, 45-Deg Elbows, and Couplings), Class 250
MS 14312 - Elbows, Pipe, Brass or Bronze, Threaded, 90-Deg, Reducing, Class 250
MS 14313 - Tees, Pipe, Brass or Bronze, Threaded, Reducing, Class 250
MS 14314 - Plugs, Pipe, Brass or Bronze, Threaded (Square Head and Square Socket), Classes 125 and 250
MS 14315 - Bushings, Pipe, Brass or Bronze, Threaded (Outside Head, Inside Head, and Face), Classes 125 and 250
MS 51845 - Elbows, Pipe, Brass or Bronze, Threaded, 90-Deg, Straight, Class 125
MS 51952 - Elbows, Pipe, Brass or Bronze, Threaded, 90-Deg, Street, Class 125

(Unless otherwise indicated, copies of federal and military specifications and standards are available from the Standardization Documents Order Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.)

2.2 Other publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues are those cited in the solicitation.

American Society of Mechanical Engineers (ASME):

ASME B16.15 - Cast Bronze Threaded Fittings

(Application for copies should be addressed to the American Society of Mechanical Engineers, United Engineering Center, 345 East 47th Street, New York, NY 10017.)

2.3 Order of precedence. In the event of a conflict between the text of this document and the references cited herein (except for associated detail specifications, specification sheets or MS standards), the text of this specification takes precedence. Nothing in this specification, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Requirements. Fittings shall be furnished in the size and pressure rating designated by the applicable MS sheets, MS 14305 through MS 14315, MS 51845, or MS 51952 (see 1.2 and 6.2), and shall meet the applicable requirements of ASME B16.15.

3.2 First article. When specified in the contract or purchase order, a sample shall be subjected to first article inspection (see 4.2.1 and 6.2).

3.3 Pressure-temperature ratings. Pressure-temperature ratings shall be as required in ASME B16.15.

3.4 Hydrostatic strength. Fittings shall be capable of withstanding, without rupture or any leakage, an internal hydrostatic pressure of two times the pressure rating for a period of one minute.

3.5 Size. Size and dimensions shall be as required in ASME B16.15.

3.6 Material. The material shall be as required in ASME B16.15.

3.7 Tolerances. Tolerances shall be as required in ASME B16.15.

3.8 Threading. Threading shall be as required in ASME B16.15.

3.9 Marking. Marking shall be as required in ASME B16.15.

3.10 Workmanship. Workmanship shall be as required in ASME B16.15.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements (examinations and tests) as specified herein. Except as otherwise specified in the contract or purchase order, the contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in this document where such inspections are deemed necessary to ensure supplies and services conform to prescribed requirements.

4.1.1 Responsibility for compliance. All items shall meet all requirements of sections 3 and 5. The inspection set forth in this document shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in this document shall not relieve the contractor of the responsibility of ensuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling inspection, as part of manufacturing operations, is an acceptable practice to ascertain conformance to requirements, however, this does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to accept defective material.

4.1.2 Component and material inspection. Components and materials shall be inspected in accordance with all the requirements specified herein and in applicable referenced documents.

4.2 Classification of inspections. The inspection requirements specified herein are as follows:

a. First article inspection (see 4.2.1)
b. Quality conformance inspection (see 4.2.2)

4.2.1 First article inspection. The first article inspection shall be performed on one fitting when a first article is required (see 3.2 and 6.2). This inspection shall include the examination of 4.3 and the test of 4.4. The first article may be either a first production item or a standard production item from the supplier's current inventory provided the item meets the requirements of the specification and is representative of the design, construction, and manufacturing technique applicable to the remaining items to be furnished under the contract.

4.2.2 Quality conformance inspection. The quality conformance inspection shall include the examination of 4.3, the test of 4.4, and the packaging inspection of 4.5.

4.3 Examination. Each fitting shall be examined for compliance with the requirements in section 3 of this document. This element of inspection shall encompass all visual examinations and dimensional measurements. Noncompliance with any specified requirements or presence of one or more defects preventing or lessening maximum efficiency shall constitute cause for rejection.

4.4 Test.

4.4.1 Air pressure test. The first article shall be subjected to an air-pressure test of not less than 60 pounds per square inch gage (415 kilopascal) while the fitting is under water. The fitting shall not leak air at any part of the surface.

4.4.2 Alternate pressure test. As an alternate test, the fitting shall be subjected to an internal hydrostatic pressure of two times the pressure rating for a period of one minute. Under the hydrostatic pressure test, the fitting shall not leak or sweat at any part of the surface.

4.5 Preparation for delivery inspection. The preservation, packaging, packing, and marking of the item shall be inspected to verify conformance to the requirements of section 5.

5. PREPARATION FOR DELIVERY

5.1 Preservation. Preservation shall be level A, B, or commercial, as specified (see 6.2).

5.1.1 Level A.

5.1.1.1 Preservative application. Preservatives shall not be used.

5.1.1.2 Unit containers. Packaging shall be in accordance with Method IC-1 of MIL-P-116. The quantity per unit pack shall be one. After bagging, fittings greater than 3-1/2 inches in any dimension shall be individually overpacked in cartons conforming to PPP-B-566, PPP-B-636, PPP-B-665, or PPP-B-676. If it is necessary to wrap the fittings prior to insertion in bags to prevent damage, then fittings shall be wrapped with barrier materials conforming to MIL-P-130 or MIL-P-17667.

5.1.1.3 Intermediate containers. Unit packages shall be packaged in intermediate containers conforming to PPP-B-566, PPP-B-636, PPP-B-665, or PPP-B-676. The quantity of unit packages per intermediate container shall be as specified in Appendix B of MIL-STD-2073-1.

5.1.1.4 Commercial. Except as specified herein, the commercial requirements are all fittings, cast plugs, bushings, couplings, and caps shall be packaged as necessary to prevent damage or deterioration during shipment.

5.2 Packing. Packing shall be level A, B, or commercial as specified (see 6.2).

5.2.1 Level A. Items packaged as specified herein shall be packed in overseas type shipping containers conforming to PPP-B-601 or PPP-B-621, and shall contain the same number of articles, shall be uniform in shape and size and snugly packed, shall be of minimum cube and tare consistent with the protection required, and shall contain identical quantities. The gross weight of the fully packed exterior shipping container shall not exceed approximately 200 pounds (91 kilograms (kg)).

5.2.2 Level B. Items shall be packed in fiber-board containers in accordance with PPP-B-636, class weather resistant, style optional, special requirements for box closure, waterproofing, and reinforcing shall be in accordance with method V of the PPP-B-636 appendix.

5.2.3 Commercial. Packages which require overpacking for acceptance by the carrier shall be packed in commercial exterior shipping containers in a manner that will ensure safe transportation at the lowest rate to the point of delivery.

5.3 Marking.

5.3.1 Military agencies. Shipments to military agencies shall be marked in accordance with MIL-STD-129.

5.3.2 Civil agencies. Shipments to civil agencies shall be marked in accordance with FED-STD-123.

6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. The pipe fittings are intended for use as outlined below:

6.1.1 Class 125 fittings. Class 125 pipe fittings are generally used for saturated steam service with pressure/temperature ratings as required for class 125 fittings in ASME B16.15.

6.1.2 Class 250 fittings. Class 250 pipe fittings are normally used for saturated steam service with pressure/temperature ratings as required for Class 250 fittings in ASME B16.15.

6.2 Acquisition requirements. Acquisition documents should specify the following:

a. Title, number, and date of this specification
b. MS part number required (see 1.2 and 3.1)
c. Issue of DODISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.1.1 and 2.2)
d. When a first article is required for inspection and approval (see 3.2 and 4.2.1)
e. Level of preservation and packaging, and level of packing required (see 5.1 and 5.2)

6.3 Data requirements. When this specification is used in an acquisition and data are required to be delivered, the data requirements shall be developed as specified by an approved Data Item Description (DD Form 1664) and delivered in accordance with the approved Contract Data Requirements List (DD Form 1423) incorporated into the contract. When the provisions of DoD Federal Acquisition Regulations (FAR) Supplement, Part 27, Sub-Part 227.405-70 are invoked and the DD Form 1423 is not used, the data should be delivered by the contractor in accordance with the contract or purchase order requirements.

6.4 Part or identifying number (PIN). The PIN to be used for fittings applied to this specification are found in the applicable MS sheet.

6.5 Subject term (key word) listing.

Bushings
Caps
Couplings
Crosses
Elbows
Plugs
Reducers
Return Bends
Tees
Y-Branches

6.6 Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extensiveness of the changes.

MILITARY INTERESTS:

Military Coordinating Activity

Navy - YD1

Custodians

Army - ME
Air Force - 99

Review Activities

Army - AR, EA, CE
Navy - CG, MC
Air Force - 82
DLA - CS

CIVIL AGENCY COORDINATING ACTIVITY:

GSA - FSS

PREPARING ACTIVITY:

Navy - YD1

(Project 4730-0188)